Screening, Isolation of Hyaluronidase Producing Bacteria and Identification of Selected Strains Based on 16S RDNA Molecular Marker

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Background & Objectives: Hyaluronidases are the polysaccharides degradating enzymes that can be find in animals testis, venoms of insects and various spectrum of microorganisms. Hyaluronidases by degradation of hyaluronic acid use in surgical, pharmaceutical and ophthalmological aspect. Because of pathogenic process of hyaluronidase producing microorganisms, isolation of hyaluronidase producing bacteria with high enzymatic activity from the human normal flora is the main goal of this study.

Methods: 55 samples from the skin and mouth normal flora of 20-28 year old people were collected (1390) then 70 colonies that had hemolysis in blood agar media were transferred to solid media which contained substrate. 55 colonies that had clear zone, were selected for measurement of enzymatic activities with the turbidity reduction assay in 600 nm. 16 bacteria with the highest enzymatic activity, were defind by 16S rDNA molecular marker and submitted with specific gene bank database.

Results: Eleven and two isolated colonies belonged to the Staphylococcus and Bacillus respectively. Three isolated colonies were from *Pseudomonas*, *Micrococcus*, *Pantoea*. The highest activity of hyaluronidase for *Bacillus sp.* LA_04 was reported.

Conclusion: Production of hyaluronidase from the *Bacillus sp.* LA_04 that was isolated from the dental plaque, can be a good candidate for industrial species and also biotechnological purposes.

Keywords: Hyaluronidase; Turbidity Reduction Assay; 16S rDNA; Bacillus Sp